KLIMATEKONTROL EF

blizzard LIGHTING

COPYRIGHT 2012
BLIZZARD LIGHTING, LLC
WISCONSIN, USA

TABLE OF CONTENTS

1. GETTING STARTED **3**
1.1 What's In The Box? 3
1.2 Getting It Out Of The Box 3
1.3 Powering Up! 3
1.4 Getting A Hold Of Us 3

IMPORTANT SAFETY INSTRUCTIONS **4**
1.5 Instructions on Our Instructions 4

2. INTRODUCTION **5**
2.1 Features 5
2.2 General Overview 5
2.3 Nifty, Spiffy Diagram (front) 5
2.4 Nifty, Spiffy Diagram (back) 6
2.5 Common Terms 7

3. OPERATING INSTRUCTIONS **8**
3.1 Setup 8
3.1.1 Setting Up The System 8
3.1.2 Fixture Addressing 8
3.1.3 The LED Display Screen 8
3.1.4 Resetting The System 9

3.2 Programming 9
3.2.1 Entering Programming Mode 9
3.3 Color/Scene Preset Programming Mode 9
3.3.1 Creating A New Color/Scene Preset 9
3.3.2 Color/Scene Preset Delete Mode 9
3.4 Chase Programming 10
3.4.1 Creating A New Chase 10
3.4.2 Inserting a Chase Step 10
3.4.3 Deleting a Chase Step 10
3.5 Playback 11
3.5.1 Manual Control Mode 11
3.5.2 Color/Scene Preset Mode 11
3.5.3 Chase Playback Mode 11
3.5.3.1 Auto Mode 12
3.5.3.2 Music Mode 12
3.5.3.2 Manual Mode 12
3.5.4 Playback Override 12
3.5.5 Strobe 13
3.5.6 Blackout 13

4. APPENDIX **14**
4.1 A Quick Lesson On DMX 14
4.2 Keeping Your KLIMATEKONTROL As Good As New 15
4.3 Returns (Gasp!) & Shipping Issues 15
4.5 TECH SPECS! 15

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

1. GETTING STARTED

1.1 What's In The Box?

- 1x KLIMATEKONTROL™ DMX Controller
- 1x 9VDC, 300ma AC/DC Adaptor
- A Warranty Card & Warranty Info
- This Lovely User Manual

1.2 Getting It Out Of The Box

We could tell just by lookin' atcha. You're a bit of a control freak, aren't ya? Just kidding! CONGRATULATIONS! You've purchased a GREAT little DMX controller! Bravo! Now that you've got your KLIMATEKONTROL™, you should carefully unpack the box and check the contents to ensure that all parts are present and in good condition. If anything looks as if it has been damaged in transit, notify the shipper immediately and keep the packing material for inspection. Again, please save the carton and all packing materials. If a fixture must be returned to the factory, it is important that the fixture be returned in the original factory box and packing.

1.3 Powering Up!

All fixtures must be powered directly off a switched circuit and cannot be run off a rheostat (variable resistor) or dimmer circuit, even if the rheostat or dimmer channel is used solely for a 0% to 100% switch.

AC Voltage Switch - Not all fixtures have a voltage select switch, so please verify that the fixture you receive is suitable for your local power supply. See the label on the fixture or refer to the fixture's specifications chart for more information. A fixture's listed current rating is its average current draw under normal conditions. Check the fixture or device carefully to make sure that if a voltage selection switch exists that it is set to the correct line voltage you will use.

Warning! Verify that the voltage select switch on your unit matches the line voltage applied. Damage to your fixture may result if the line voltage applied does not match the voltage indicated on the voltage selector switch. All fixtures must be connected to circuits with a suitable Ground (Earthing).

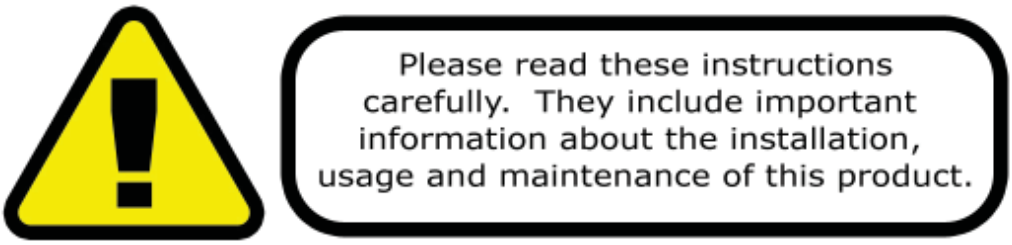
1.4 Getting A Hold Of Us

If something is wrong, just give us a call or send an email. We'll be happy to help, honest.

Blizzard Lighting
W220 N1531 Jericho Ct. Suite E, Waukesha, WI 53186 USA
support@blizzardlighting.com | Phone: 866-493-6025
www.blizzardlighting.com

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

IMPORTANT SAFETY INSTRUCTIONS



- Please keep this User Guide for future use. If you sell the unit to someone else, be sure that they also receive this User Guide.
- ALWAYS make sure that you are connecting to the proper voltage, and that the line voltage you are connecting to is not higher than that stated on the decal or rear panel of the fixture.
- This product is intended for indoor use only.
- To prevent risk of fire or shock, do not expose fixture to rain or moisture.
- Make sure there are no flammable materials close to the unit while operating.
- The unit must be installed in a location with adequate ventilation, at least 20in (50cm) from adjacent surfaces. Be sure that no ventilation slots are blocked.
- ALWAYS disconnect from the power source before servicing or replacing fuse and be sure to replace with same fuse size and type.
- ALWAYS secure fixture using a safety chain. NEVER carry the fixture by its head. Use its carrying handles.
- DO NOT operate at ambient temperatures higher than 104°F (40°C).
- In the event of a serious operating problem, stop using the unit immediately. NEVER try to repair the unit by yourself. Repairs carried out by unskilled people can lead to damage or malfunction. Please contact the nearest authorized technical assistance center. Always use the same type spare parts.
- NEVER connect the device to a dimmer pack.
- Make sure the power cord is never crimped or damaged.
- Never disconnect the power cord by pulling or tugging on the cord.
- Avoid direct eye exposure to the light source while it is on.

Caution! There are no user serviceable parts inside the unit. Do not open the housing or attempt any repairs yourself. In the unlikely event your unit may require service, please contact Blizzard Lighting at support@blizzardlighting.com.

1.5 Instructions on Our Instructions

We try to make these manuals easy to read and as fun as reading an instruction manual can be. Because there are buttons, switches, sliders and knobs galore on most of our products, it makes sense to refer to things in a consistent fashion. So, when you see text formatted in certain ways, it should say to you “Hey! Look at me! I MEAN something, dammit!”

Special Text	What It Means
LED	Text displayed on the fixture’s LED control panel
<MENU>	Button <X> to be pressed
MENU --> SHMD	A sequence to be followed
000 <-> 255	A range of values

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

2. INTRODUCTION

2.1 Features

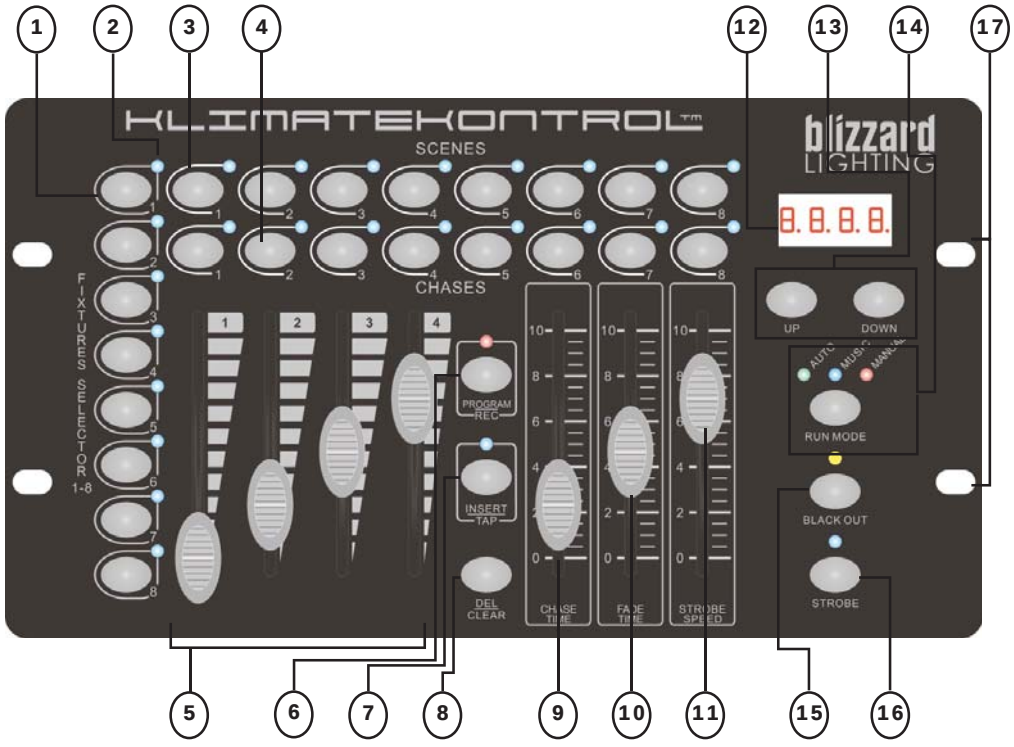
- DMX512/1990 Standard
- Controls 8 fixtures of up to 4 channels, totally 32 channels
- 4 preset scene/color banks, 8 scenes/colors per bank, total of 32 possible presets
- Record up to 8 chases with up to 32 scenes per chase
- 4 sliders for direct control of channels
- Built-in microphone for music mode
- Auto mode program controlled by fade time sliders
- DMX out: 3-pin XLR
- LED information display
- Blackout function and instant strobe with variable speed fader

2.2 General Overview

The controller is a universal intelligent lighting controller. It allows the control of 8 fixtures composed of 4 channels each and up to 256 programmable scenes. Eight chase banks can contain up to 32 steps composed of the saved scenes and in any order. Programs can be triggered by music, automatically or manually. All chases can be executed at the same time.

On the surface you will find various programming tools such as 4 universal channel sliders, quick access fixture and scene buttons, and an LED display indicator for easier navigation of controls and menu functions.

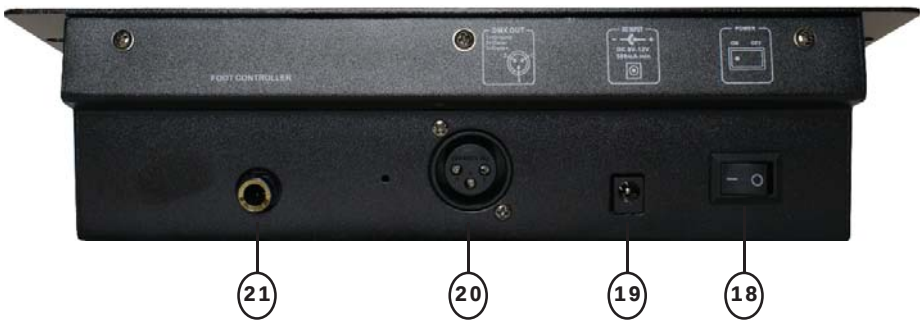
2.3 Nifty, Spiffy Diagram (front)



Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

Number	Button/Fader/Connection	Does...
1	Fixture Select Buttons	Fixture selection.
2	Fixture Indicator LEDs	Indicates the fixture(s) currently selected.
3	Scene Select Buttons / LEDs	Universal bump buttons representing scene location for storage and selection.
4	Chase Select Buttons / LEDs	Universal bump buttons representing chase location for storage and selection.
5	Channel Faders	Adjusts DMX values - Channel 1-4 may be adjusted after pressing the respective fixture select button.
6	Program/REC Button	Enters programming mode, records a step in a chase.
7	Insert/Tap Button	Inserts a step in a chase while in programming mode, or allows tap control of chases in playback mode.
8	DEL/Clear Button	Deletes Scenes/Chases, clears current fader output.
9	Chase Time Fader	Sets the chase time in AUTO mode, 1=slowest, 10=fastest.
10	Fade Time Fader	Sets the fade time in AUTO mode, 1=fastest, 10=slowest.
11	Strobe Speed Fader	Sets the speed of the strobe effect, 1=slowest, 10=fastest.
12	LED Display	Displays pertinent information about the current operation of the controller. See page 9 for more details.
13	UP / DOWN Buttons	Selects the current bank, steps through chases in MANUAL mode, adjusts the sound sensitivity and the length of time each chase runs when running multiple chases.
14	Run Mode Button & LEDs	Selects between AUTO/MUSIC/MANUAL modes and displays current operating mode.
15	Blackout Button & LED	Stops all output from the controller.
16	Strobe Button / LED	Triggers the strobe function (momentary button)
17	Mounting Holes	Allows you to securely fasten the controller to the surface of your choice, also works nicely for holding pens, pencils, and other small round things you always have laying around.
18	Power Switch	Really? C'mon!
19	DC Power Input Connector	Plug in ONLY the included AC/DC adaptor here.
20	DMX Output Connector	3-pin DMX output - this is where all the magic happens
21	Foot Controller Input	Allows you to use an optional foot controller to control some functions.

2.4 Nifty, Spiffy Diagram (back)



Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

2.5 Common Terms

The following are common terms used in intelligent light programming, so pay attention! We'll be using them throughout the manual.

- **Blackout** is a state by where all lighting fixtures light output are set to 0 or off, usually on a temporary basis.
- **DMX-512** stands for **D**igital **M**ultiple**X** is an industry standard digital communication protocol used in entertainment lighting equipment. For more information read the ***DMX Primer*** and ***DMX Control Mode*** Sections later in the manual.
- **Fixture** refers to your lighting instrument or other device such as a fogger or dimmer of which you can control.
- **Programs** are a bunch of scenes stacked one after another. It can be programmed as either a single scene or multiple scenes in sequence.
- **Scenes** are static lighting states.
- **Sliders** are a delicious small burger or sandwich, but here they are used in the same context as faders.
- **Chases** can also be called programs. A chase consists of a number of scenes stacked one after another.
- **Stand Alone** refers to a fixture's ability to function independently of an external controller and usually in sync to music, due to a built in microphone.
- **Fade Slider** is used to adjust the time between scenes within a chase.
- **Speed Slider** affects the amount of time a scene will hold its state. It is also considered a wait time.
- **Shutter/Strobe** is a mechanical device in the lighting fixture that allows you to block the lights path. It is often used to lessen the intensity of the light output and to strobe.
- **Patching** refers to the process of assigning fixtures a DMX channel.
- **Playbacks** can be either scenes or chases that are directly called to execution by the user. A playback can also be considered program memory that can be recalled during a show.

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

3. OPERATING INSTRUCTIONS

3.1 Setup

3.1.1 Setting Up The System

Plug the AC to DC power supply to the system back panel and to the mains outlet.

Plug in your DMX cable(s) to your intelligent lighting as described in the fixtures respective manual. For a quick lesson on DMX see the ***DMX Primer*** section in the Appendix of this manual.

3.1.2 Fixture Addressing

The Controller is programmed to control 4 channels of DMX per fixture, therefore the fixtures you wish to control with the corresponding **FIXTURE** buttons on the unit, must be spaced 4 channels apart.

Fixture Number	DMX Start Address	Binary DIP Switch Settings (SET TO ON POSITION)
1	1	1
2	5	1, 3
3	9	1, 4
4	13	1, 3, 4
5	17	1, 5
6	21	1, 3, 5
7	25	1, 4, 5
8	29	1, 3, 4, 5

Please refer to your individual fixture's manual for detailed DMX addressing instructions. The table above refers to a standard 9-DIP Switch binary configurable device.

3.1.3 The LED Display Screen

KLIMATEKONTROL features a 4-position LED display which provides information about the current mode, function and status of the controller. The messages displayed on the screen are detailed here:

LED Display	Means...
CP1.1-CP4.8	Color/Scene Preset, Bank 1-4, Preset 1-8 is selected. Bank is the first digit, preset is the second.
CAS1-CAS8	Chase 1-8 is selected. The display will change to the current chase step after a moment.
SL01-SL32	Chase Step 1-32 is currently running. The display will step through chase steps based on the current output mode (Auto/Music/Manual)
D000-D255	DMX value currently being assigned by the active fixture control fader.
F01.0 - F20.0	While holding down the **<STROBE>** button, displays the current strobe speed, 1-20 flashes per second
0.1-60.00	Chase scene time. From 0.1-60 seconds per step.
P000-P100	Chase fade time. From 0-100% of the current chase scene time.
M001-M100	Sound sensitivity, used in music control mode.
L001-L200	Loop Time. The time a chase will loop before moving to the next selected chase.
NULL	Displayed when the user selects a chase/scene which has not been recorded.

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

3.1.4 Resetting The System

WARNING: This will reset the controller to its factory defaults. ALL PROGRAMS AND SETTINGS WILL BE ERASED!

1. Turn the unit off.
2. Press and hold **<PROGRAM/REC>** & **<DEL/CLEAR>**
3. Turn the unit on while you continue to hold **<PROGRAM/REC>** & **<DEL/CLEAR>**
4. All LEDs will blink. Release the held buttons and the LEDs will stop blinking.
5. The settings will be reset to factory defaults.

3.2 Programming

Regardless of whether you are programming a chase or scene, you must first enter programming mode.

3.2.1 Entering Programming Mode

1. Press and hold **<PROGRAM/REC>** for 3 seconds.
2. The Program/REC LED indicator will blink, indicating programming is active.
3. The LED indicators for any previously programmed scenes in the current bank and any previously programmed chases will blink.
4. Programming mode is now active.

3.3 Color/Scene Preset Programming Mode

This allows the user to create a preset color/scene which can be used to override current fixture output and may also be used in chase programming.

3.3.1 Creating A New Color/Scene Preset

1. Enter programming mode as described in Section 3.2.1.
2. Using the **<FIXTURE SELECTOR>** button(s), select the fixtures to include in the Color/Scene Preset.
3. Adjust the fixture(s) output using **<CHANNEL FADERS 1-4>** as desired.
4. Press **<PROGRAM/REC>**.
5. Select the desired scene bank using **<UP/DOWN>**.
6. Press **<SCENE 1-8>**. All LEDs will flash quickly.
7. Repeat steps 1-6 to add additional presets if desired.
8. Hold **<PROGRAM/REC>** for 3 seconds to exit programming mode. The LED indicator above the **<PROGRAM/REC>** button will extinguish.

3.3.2 Color/Scene Preset Delete Mode

This allows the user to delete a previously programmed preset color/scene.

1. Enter programming mode as described in Section 3.2.1.
2. Select the desired scene bank using **<UP/DOWN>**.
3. Hold **<DEL/CLEAR>**, then press the **<SCENE 1-8>** button you wish

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

to delete.
4. All LEDs will flash 3 times, and the LED indicator for the selected scene will now remain off. The scene has been deleted.
5. Repeat steps 2-4 to delete additional presets if desired.
6. Hold **<PROGRAM/REC>** for 3 seconds to exit programming mode. The LED indicator above the **<PROGRAM/REC>** button will extinguish.

3.4 Chase Programming

A chase is a sequence of different scenes or steps which are called one after another. KLIMATEKONTROL can store up to 8 programs of 32 scenes each.

3.4.1 Creating A New Chase

1. Enter programming mode as described in Section 3.2.1.
2. Using the **<CHASE 1-8>** button, select the chase you wish to program.
3. Using the **<FIXTURE SELECTOR>** button(s), select the fixtures to include in the chase step.
4. Adjust the fixture(s) output using **<CHANNEL FADERS 1-4>** as desired, OR, to use a previously programmed scene/color preset:
5. Select the desired scene bank using **<UP/DOWN>**.
6. Press **<SCENE 1-8>**.
7. Press **<PROGRAM/REC>**. All LEDs will blink 3 times to indicate the first step has been stored successfully. If no data has been stored, the LED display will read NULL.
8. Repeat steps 2-6 to store additional steps if desired. Up to 32 steps may be stored in each chase. If 32 steps have been stored in a chase and the user attempts to store an additional step, the LED display will read FULL.
9. Hold **<PROGRAM/REC>** for 3 seconds to exit programming mode. The LED indicator above the **<PROGRAM/REC>** button will extinguish.

NOTE: After scene programming, press the **<DEL/CLEAR>** *button to clear any output, to avoid inadvertently overwriting a scene/color preset.*

3.4.2 Inserting a Chase Step

1. Enter programming mode as described in Section 3.2.1.
2. Using the **<CHASE 1-8>** button, select the chase you wish to modify.
3. Press the **<INSERT/TAP>** button. The LED indicator will illuminate and the current step will display on the LED display. If there are no steps in the chase, the display will read ST00.
4. Use the **<UP/DOWN>** buttons to select the position for the inserted step.
5. Using the **<FIXTURE SELECTOR>** button(s), select the fixtures to include in the chase step.
6. Adjust the fixture(s) output using **<CHANNEL FADERS 1-4>** as desired, OR, to use a previously programmed scene/color preset:
7. Select the desired scene bank using **<UP/DOWN>**.
8. Press **<SCENE 1-8>**.
9. Press **<PROGRAM/REC>**. All LEDs will blink 3 times to indicate the first step has been stored successfully. If no data has been stored,

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

the LED display will read FULL.

10. Repeat steps 2-9 to store additional steps if desired. Up to 32 steps may be stored in each chase. If 32 steps have been stored in a chase and the user attempts to store an additional step, the LED display will read FULL.
11. Hold **<PROGRAM/REC>** for 3 seconds to exit programming mode. The LED indicator above the **<PROGRAM/REC>** button will extinguish.

3.4.3 Deleting a Chase Step

1. Enter programming mode as described in Section 3.2.1.
2. Using the **<CHASE 1-8>** button, select the chase you wish to modify.
3. Press the **<INSERT/TAP>** button. The LED indicator will illuminate and the current step will display on the LED display. If there are no steps in the chase, the display will read ST00.
4. Use the **<UP/DOWN>** buttons to select the step to delete.
5. Press the **<DEL/CLEAR>** button. All LEDs will blink 3 times, indicating the delete has succeeded. The steps following the deleted step will move up one step, and the chase will be one step shorter. If the last step is deleted, the previous step will be displayed. If there are no steps to delete, the LED display will read NULL.
6. Repeat steps 2-5 to delete additional steps as desired.
7. Hold **<PROGRAM/REC>** for 3 seconds to exit programming mode. The LED indicator above the **<PROGRAM/REC>** button will extinguish.

3.5 Playback

The KLIMATEKONTROL features three different playback modes: Manual Control Mode, Scene/Color/Scene Preset Mode, and Chase Mode. Additionally, the user may trigger step changes in chase mode in one of three ways: Automatically (Auto Chase Mode), Via audio signal detection (Music Chase Mode), or Manually (Manual Chase Mode). We'll look at all the options now.

3.5.1 Manual Control Mode

Allows the user to create a precise static color using KLIMATEKONTROL's 4 control faders.

1. Ensure that BLACKOUT mode is not selected, IE that the LED indicator above the **<BLACKOUT>** button is not lit.
2. Using the **<FIXTURE SELECTOR>** button(s), select the fixtures to be controlled.
3. Adjust the color output using **<FADER 1-4>** as desired.

3.5.2 Color/Scene Preset Mode

Allows the user to display one of up to 32 previously programmed color preset.

1. Ensure that BLACKOUT mode is not selected, IE that the LED indicator above the **<BLACKOUT>** button is not lit.
2. Select the desired scene bank using **<UP/DOWN>**.

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

3. Select the desired scene/color preset using **<SCENE 1-8>**.

3.5.3 Chase Playback Mode

Allows the user to display one or more of up to 8 previously programmed chases in sequence.

1. Ensure that BLACKOUT mode is not selected, IE that the LED indicator above the **<BLACKOUT>** button is not lit.
2. Press **<CHASE 1-8>** to run a chase directly. The corresponding LED indicator will illuminate.
3. If you wish to run additional chases in sequence, select additional chases to run by again pressing **<CHASE 1-8>**. The first chase selected will have its LED indicator lit. Subsequently selected chases will have their LED indicators flash once per second.
4. Now, select the playback mode for the chase; Auto, Music or Manual.

3.5.3.1 Auto Mode

In auto mode, the chases will automatically move through their individual steps based on the chase and fade times set using the **<CHASE TIME>** *and* **<FADE TIME>** *faders.*

1. Follow the steps indicated in Section 3.5.3.
2. Press the **<RUN MODE>** button until the LED indicator for AUTO mode is illuminated.
3. Using the **<CHASE TIME>** fader, adjust the time each step will be displayed, between 0.1 and 60 seconds per step. The LED display will indicate the current time.
4. Using the **<FADE TIME>** fader, adjust the fade time, expressed as a percentage (0-100%) of the total chase time. The LED display will indicate the current percentage.
5. Using the **<UP/DOWN>** buttons, adjust the number of times to loop each chase. This function is only applicable when 2 or more chases are being run in sequence.
6. Finally, you may override the chase/fade times set using the faders by using the **<INSERT/TAP>** button. Press the **<INSERT/TAP>** button and the LED indicator will begin to blink.
7. Press the **<INSERT/TAP>** button again and the LED indicator will be extinguished. The amount of time between successive button presses will be the new chase time.
8. Adjusting the **<CHASE TIME>** or **<FADE TIME>** faders will override this setting.

3.5.3.2 Music Mode

In music mode, the chases will automatically move through their individual steps based on the beat detected via the internal microphone.

1. Follow the steps indicated in Section 3.5.3.
2. Press the **<RUN MODE>** button until the LED indicator for MUSIC mode is illuminated.
3. Using the **<UP/DOWN>** buttons, adjust the sound sensitivity to achieve optimal beat detection.

3.5.3.2 Manual Mode

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

In manual mode, the chases will move through their individually steps only when triggered manually by the user.

1. Follow the steps indicated in Section 3.5.3.
2. Press the **<RUN MODE>** button until the LED indicator for MANUAL mode is illuminated.
3. Using the **<UP/DOWN>** buttons, move through the steps in the selected chase.

3.5.4 Playback Override

Allows the user to manually override the current output while in Color/Scene Preset or Chase Playback Mode.

1. Ensure that BLACKOUT mode is not selected, IE that the LED indicator above the **<BLACKOUT>** button is not lit.
2. Using the **<FIXTURE SELECTOR>** button(s), select the fixtures to be controlled.
3. Adjust the color output using **<FADER 1-4>** as desired.
4. To return to Color/Scene Preset or Chase Playback Mode, press **<DEL/CLEAR>**.

3.5.5 Strobe

Allows the user to strobe the current playback. ***Note:*** *Strobe operates even when the* **<BLACKOUT>** *button is active.*

1. Press and hold the **<STROBE>** button. All currently selected/operating fixtures will strobe.
2. Using the **<STROBE SPEED>** fader, adjust the strobe speed, from 1 to 20 flashes per second.
3. Release the **<STROBE>** button, and strobing will stop.

3.5.6 Blackout

Allows the user to stop all fixture output immediately (except while strobing is active).

1. Press the **<BLACKOUT>** button. All output will cease. The LED indicator will illuminate.
2. Press the **<BLACKOUT>** button again, and playback will resume.

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

4. APPENDIX

4.1 A Quick Lesson On DMX

DMX (aka DMX-512) was created in 1986 by the United States Institute for Theatre Technology (USITT) as a standardized method for connecting lighting consoles to lighting dimmer modules. It was revised in 1990 and again in 2000 to allow more flexibility. The Entertainment Services and Technology Association (ESTA) has since assumed control over the DMX512 standard. It has also been approved and recognized for ANSI standard classification.

DMX covers (and is an abbreviation for) Digital MultipleXed signals. It is the most common communications standard used by lighting and related stage equipment.

DMX provides up to 512 control "channels" per data link. Each of these channels was originally intended to control lamp dimmer levels. You can think of it as 512 faders on a lighting console, connected to 512 light bulbs. Each slider's position is sent over the data link as an 8-bit number having a value between 0 and 255. The value 0 corresponds to the light bulb being completely off while 255 corresponds to the light bulb being fully on.

DMX data is transmitted at 250,000 bits per second using the RS-485 transmission standard over two wires. As with microphone cables, a grounded cable shield is used to prevent interference with other signals.

There are five pins on a DMX connector: a wire for ground (cable shield), two wires for "Primary" communication which goes from a DMX source to a DMX receiver, and two wires for a "Secondary" communication which goes from a DMX receiver back to a DMX source. Generally, the "Secondary" channel is not used so data flows only from sources to receivers. Hence, most of us are most familiar with DMX-512 as being employer over typical 3-pin "mic cables," although this does not conform to the defined standard.

DMX is connected using a daisy-chain configuration where the source connects to the input of the first device, the output of the first device connects to the input of the next device, and so on. The standard allows for up to 32 devices on a single DMX link.

Each receiving device typically has a means for setting the "starting channel number" that it will respond to. For example, if two 6-channel fixtures are used, the first fixture might be set to start at channel 1 so it would respond to DMX channels 1 through 6, and the next fixture would be set to start at channel 7 so it would respond to channels 7 through 12.

The greatest strength of the DMX communications protocol is that it is very simple and robust. It involves transmitting a reset condition (indicating the start of a new "packet"), a start code, and up to 512 bytes of data. Data packets are transmitted continuously. As soon as one packet is finished, another can begin with no delay if desired (usually another follows within 1 ms). If nothing is changing (i.e. no lamp levels change) the same data will be sent out over and over again. This is a great feature of DMX -- if for some reason the data is not interpreted the first time around, it will be re-sent shortly.

Not all 512 channels need to be output per packet, and in fact, it is very uncommon to find all 512 used. The fewer channels are used, the higher the "refresh" rate. It is possible to get DMX refreshes at around 1000 times per second if only 24 channels are being transmitted. If all 512 channels are being transmitted, the refresh rate is around 44 times per second.

DMX has become the standard for lighting control. It is flexible, robust, and scalable, and its ability to control everything from dimmer packs to moving lights to foggers to lasers makes it an indispensable tool for any lighting designer or lighting performer.

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

4.2 Keeping Your KLIMATEKONTROL As Good As New

The KLIMATEKONTROL you've received is a rugged, tough piece of pro lighting equipment, and as long as you take care of it, it will take care of you. That said, like anything, you'll need to take care of it if you want it to operate as designed. You should absolutely keep the fixture clean, especially if you are using it in an environment with a lot of dust, fog, haze, wild animals, wild teenagers or spilled drinks.

Cleaning the surface routinely with a suitable cleaner is useful for keeping the faders clean and in good operating condition.

In transit, keep the fixtures in cases. You wouldn't throw a prized guitar, drumset, or other piece of expensive gear into a gear trailer without a case, and similarly, you shouldn't even think about doing it with your shiny new light fixtures.

Common sense and taking care of your fixtures will be the single biggest thing you can do to keep them running at peak performance and let you worry about designing a great light show, putting on a great concert, or maximizing your client's satisfaction and "wow factor." That's what it's all about, after all!

4.3 Returns (Gasp!)

We've taken a lot of precautions to make sure you never even have to worry about sending a defective unit back, or sending a unit in for service. But, like any complex piece of equipment designed and built by humans, once in a while, something doesn't go as planned. If you find yourself with a fixture that isn't behaving like a good little fixture should, you'll need to obtain a Return Authorization (RA).

Don't worry, this is easy. Just send an e-mail to support@blizzardlighting.com, and we'll issue you an RA. Then, you'll need to send the unit to us using a trackable, pre-paid freight method. We suggest using USPS Priority or UPS. Make sure you carefully pack the fixture for transit, and whenever possible, use the original box & packing for shipping.

When returning your fixture for service, be sure to include the following:

1.) Your contact information (Name, Address, Phone Number, Email address).
2.) The RA# issued to you
3.) A brief description of the problem/symptoms.

We will, at our discretion, repair or replace the fixture. Please remember that any shipping damage which occurs in transit to us is the customer's responsibility, so pack it well!

4.4 Shipping Issues

Damage incurred in shipping is the responsibility of the shipper, and must be reported to the carrier immediately upon receipt of the items. Claims must be made within seven (7) days of receipt.

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED

4.5 TECH SPECS!

Weight & Dimensions	
Length	10.2 inches (255 mm)
Width	5.6 inches (142 mm)
Height	2.75 inches (69.5 mm)
Weight	2.75 lbs (1.25 kg)
Power	
Operating Voltage	9-12 VDC, 2A (From included power supply)
Thermal	
Max. Operating Temp.	104 degrees F (40 degrees C) ambient
Control	
Protocol	USITT DMX-512
DMX Channels	32
Output	3-pin XLR Female
Sitting on a cornflake	
waiting for the van to come.	
Warranty	2-year limited warranty.

Copyright © 2012 Blizzard Lighting, LLC.
ALL RIGHTS RESERVED